

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Patent Appln. No. 09/813,348

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cancel'd.* a stepping-up DC/DC converter for stepping up a voltage of said battery and applying a stepped-up voltage to said field coil,

a voltage control means for controlling an output voltage of said alternator by controlling a current of said field coil, and

a control means for increasing power of said alternator by changing said output voltage of said alternator in response to a rotating speed of said alternator when said alternator supplies power to said high power load, and for controlling said output voltage of said alternator to a battery charging voltage by regulating said voltage control means when said alternator supplies power to said battery.

a² 3. (Amended) The electrical power supply system for the automotive vehicle according to claim 1, wherein said output voltage of said alternator which changes in response to said rotating speed is set to be higher than said voltage of said battery.

a³ 5. (Amended) The electrical power supply system for the automotive vehicle according to claim 1, wherein said voltage control means controls said field current of said alternator based on a detected temperature of said field coil

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6. (Amended) The electrical power supply system for the automotive vehicle according to claim 1, wherein said voltage control means controls said field current of said alternator based on an inferred temperature from said field current of said alternator.

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8. (Amended) An electrical power supply system for an automotive vehicle comprising:

an alternator having an armature winding and a field coil for supplying a power to both a high power load and a battery,

an alternator having an armature winding and a field coil for supplying a power to both a high power load and a battery.

a stepping-up DC/DC converter for stepping up a voltage of said battery and applying a stepped-up voltage to said field coil

a voltage control means for controlling an output voltage of said alternator by controlling a current of said field coil, and for increasing an output of said alternator by changing said output voltage in response to a rotating speed of said alternator in a predetermined rotating speed zone, and

a stepping-down DC/DC converter to step down said output voltage of said alternator to a charging voltage for said battery, and to supply power with a regulated voltage to both said battery and said high power load.

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10. (Amended) The electrical power supply system for the automotive vehicle according
to claim 8, wherein an output voltage of said stepping-down DC/DC converter has negative
gradient temperature characteristics for suppressing a temperature rise of said alternator.